Huckleberry Timber Sale
Environmental Assessment #OR135-EA-04-02

Introduction

The Bureau of Land Management (BLM) Spokane District is proposing a timber harvest on 188 acres of public land it administers in northeastern Washington. The proposed timber sale area is about 5 miles southeast of the community of Fruitland in the Huckleberry Mountains, in Stevens County. The project's legal description is Township 29 North, Range 37 East, Section 12 (see Map). This area is in the Northeast Management Area of the Spokane BLM District's Border Resource Area.

I. Purpose and Need for Action

The purpose for the timber harvest is to manage the area pursuant to its classification, which is commercial forestland.

The need for harvest in the project area at this time is to improve forest health due to infestations of mistletoe, root rot, bark beetles and brush competition. Dwarf mistletoe, a vegetative parasite that derives its water and nutrients from the host plant, is infecting scattered Douglas-fir and western larch throughout the project area. Mistletoe infestations reduce tree growth and over time deform trees and make them susceptible to insect attack. Many of the large overstory western larch in the project area have died, and some Douglas-fir trees have been top-killed due to mistletoe infestations.

Another forest health issue is that active root rot pockets and bark beetles are causing mortality in Douglas-fir and grand fir. Also, there is a great deal of brush competition in small openings and breaks in the overhead canopy.

Commercial trees (trees over 8 inches in diameter) on the project area have an average basal area of over 200 square feet per acre. The average merchantable tree diameter is 15 inches, and the average tree density is more than 193 trees per acre. At this density, there is intense competition for available water and nutrients. Competition has stressed these trees, leaving them susceptible to insect attack, especially during extended periods of drought. Scattered large ponderosa pines occur near the ridge tops. According to studies, competition above historic levels can shorten the life span of pine trees that otherwise could grow 500 years or more.

The Huckleberry Mountain area is managed primarily for timber production as described in the Spokane District Resource Management Plan Record of Decision (1987) and as amended (1992).

Background

A previous entry, the Cedar Canyon Timber Sale in 1971, harvested 2.7 million board feet on 526 acres, all in section 12. In that entry, the trees were individually marked for cutting. The project area was pre-commercially thinned in 1983.

The absence of wildfires in the area for at least the last 30 years has resulted in stands that are dense with understory trees. The present age distribution and stand structure presents a fire

hazard because the understory provides fuel ladders to the overstory. The present vegetative condition presents potential for a wildfire that could result in complete stand replacement.

Historical evidence indicates that this mid-elevation zone experienced low to mixed severity fires. The frequency, severity, and size of wildland fires have increased over the last 100 years, and especially the last 20 years. Most wildland fires are highly destructive, with an intensity that results in stand replacement. Past fires acted as a thinning agent to maintain early-seral species with open understories of predominantly grasses and forbs. Historically, the stands in the project area were older and had a greater diversity of age classes. Tree species mix and age classes have changed, with uniform stands of middle-aged trees predominating.

Goals and Objectives

The three primary goals of the proposed harvest are to:

- Create stands that are structurally diverse in species composition, tree size, and age.
- Create an ecosystem with high resiliency and integrity, capable of withstanding disturbance intact.
- Support local economy by offering merchantable timber for processing by local sawmills.

The objective is to reduce stocking and improve stands in the project area through vegetative management to increase tree health and reduce the risk of uncontrollable catastrophic fire. The trees remaining after harvest (50-60% of merchantable volume) would serve to limit brush invasion as the canopy closes and reduces available light.

II. Alternatives

Two alternatives were analyzed: Alternative 1 (Timber Harvest – Proposed Action) and Alternative 2 (No Action). Both alternatives are described individually below.

Alternative 1 – Timber Harvest (Proposed Action) – The Proposed Action is to harvest 1.2 million board feet (MMBF) of timber on 175 acres.

In this alternative, stand density would be reduced, and diseased and infected trees would be removed. This would be accomplished through commercial thinning and strategies resembling natural disturbance processes. Yarding would be done using tractor and cable methods.

Silviculture

Silvicultural treatments would include single tree selection and group selection. In single tree selection, merchantable trees would be harvested to a maximum leave tree spacing of 25 feet by 25 feet (70 trees per acre minimum). Selection criteria would focus on leaving large healthy trees for retention. Group selections would average 0.5 to 1 acre in size, with a maximum size of 2 acres. Openings would be designed to mimic disturbance processes, to provide for tree regeneration.

All live trees infected with root rot would be harvested. Resistant trees would be retained within infection centers and within a 30-foot distance of the nearest infected tree. Susceptible tree species over 8 inches in diameter within areas infected with root rot and within a 30-foot perimeter of such areas would be harvested. Understocked group selections would be planted with root-rot resistant species such as Ponderosa Pine. Hexazinone, an approved herbicide, would be used around planted ponderosa pine seedlings to control brush competition.

Where western larch reproduction is desired, mistletoe-free individuals would be retained as a seed source. Successful natural regeneration of this species would not take place under closed canopies Because successful reproduction requires direct sunlight and mineral soil exposure, competing trees would be thinned to an average 25 foot spacing (70 trees/ac.) in areas where uninfected western larch forms a major component (>25%) of the overstory. Group selections up to 0.5 acre in size would be used as an alternative to promote regeneration. Mineral soil would be exposed to provide a seedbed and opportunity for successful western larch regeneration.

Douglas-fir and western larch trees with a dwarf mistletoe rating of four or more (2/3 of the live crown infected) would be harvested, except for those retained for wildlife purposes.

No merchantable ponderosa pine would be harvested. Competing trees (non pine) and fuel ladder trees would be harvested within a minimum 40 foot radius around each large ponderosa pine. Within this circle, mineral soil would be exposed to promote pine regeneration. No planting, piling, or underburning would be done within 10 feet of the canopy drip line of retained ponderosa pine.

Slash Disposal

Where lopping and scattering is the prescribed slash disposal method, branches, tops, and unmerchantable logs would be piled to a height of less than 24 inches above the ground. Slash concentrations posing fire hazards at landings and within the right-of-way of mainline roads would be piled and burned.

Access

Access will be via BLM, State and County roads, existing easements and road use agreements. Mainline access may be closed intermittently during cable yarding operations. Roads would not be closed overnight or during fire risk restriction hours ('hoot owl' restrictions).

Other Specific Actions for this Alternative

- Tree density and unit design would be in conformance with visual resource management guidelines. Trees on ridgetops would be retained to minimize visual impacts (skylining effect).

- All units would be yarded in such a way that duff, litter, and coarse woody debris greater than 12 inches in diameter would be maintained at current or greater levels as is operationally possible. Soil disturbance would be minimized to maintain productivity. Large coarse woody debris in contact with the ground would be retained and protected to the greatest extent possible.

- Trees would be directionally felled away from all draw bottoms. Maximum operational suspension in the cable units should be practiced to alleviate soil/duff displacement on steep slopes.

- For all cable yarding, maximum operational suspension would be maintained on all slopes greater than 35%. Cable corridors would be minimum width. The intent is to minimize surface disturbance and erosion hazard.

- Ground-based yarding (tractor) would be limited to slopes 35% or less, and equipment would be limited to designated skid trails and existing skid roads wherever possible. Trees would be felled toward skid roads to help maximize distance between skid trails and minimize surface disturbance. Skid roads on grades greater than 8% would be waterbarred after yarding is completed. All ground-based skidding would be done with tractor type skidders. Use of rubber tired skidders would be prohibited. The percentage of each unit covered by skid trails would be no more than 15%.

- To reduce compaction excessive rutting, tractor yarding would take place when soil moisture levels are less than 20 percent.

- No yarding would be allowed up and down draw bottoms within riparian reserves. The intent is to minimize occurrence of erosion in existing areas of overland surface flow.

- All skid roads placement would be approved by the BLM. The intent is to minimize impacts (disturbance, particle displacement, and compaction) by tractors and other mechanical equipment and thus minimize productivity loss. Existing skid roads would be favored over placement of new skid roads. Skid trails for tractor yarding would be spaced a minimum of 100 feet apart.

- Approximately 3900 feet of temporary roads (referred to as spurs) would be constructed to facilitate yarding (see map). Temporary roads would be waterbarred, blocked, and closed after harvest operations are completed. Temporary roads would be ripped where appropriate.

See Project Design Features below for actions that would be done with this alternative to minimize impacts.

Alternative 2 - No Action – This alternative proposes to allow physical and biological processes to continue.

Project Design Features

Project design features (PDFs) are management actions designed to reduce or mitigate potential impacts associated with Alternative 1.

Resource Inventories

Resource inventories (including cultural, botanical and wildlife) will be conducted prior to implementing this project.

- If cultural resources are located during project implementation, the project will be redesigned to avoid impacts to the site. If cultural properties cannot be avoided, consultation will be conducted with the Office of Archaeology and Historic Preservation, tribal governments and historical societies, as appropriate, and in some cases the Advisory Council on Historic Preservation.

- If cultural remains are encountered during project implementation, the disturbing activity will be halted, the authorized BLM official will be contacted, and the resource will be protected until a BLM archaeologist has assessed the historic significance of the resource.

- If Special Status Plant species are identified, measures appropriate to protect Special Status Plant species will be taken. These could include: timing of treatment, buffering areas to preclude treatment, or no treatment of the area.

Buffers

Intermittent streams, as shown on the map, will have no-cut buffers of 100 feet slope distance, or one tree height (whichever is greater).

Fuels Management

- Prior to prescribed burning in the subject area, a burn plan will be prepared to address burning objectives and operational concerns. The plan will identify mitigation measures needed to protect site-specific resource values, notification procedures for local area residents, and potential fire behavior and precautions.

- Selected piles designated by a BLM wildlife biologist will be reserved from burning.

- Slash piles will not be constructed on logs, stumps, downed logs, talus slopes, cultural features, or within 25 feet of wildlife trees with nest structures, in roadways or drainage ditches.

- Piles will not be closer than 10 feet to reserved trees, or 25 feet to a unit boundary.

- Piles will be ignited, except those within a designated “no treatment zone” of a riparian reserve, or a buffer to protect habitat for threatened/endangered species.

- Pile burning will be done in the fall/winter season after significant rainfall has occurred.

- Burning will be done by the BLM or the timber sale purchaser in accordance with an approved burn plan.

Roads and Road Use

- All temporary roads, landings, and main skid trails will be graded, blocked (piling slash, stumps etc.), waterbarred as needed, and seeded after harvest operations are completed.

- Landing locations will be designated by BLM and placed within road rights-of way.

- Constructed road surfaces, skid trails, landings, cut and fill slopes, and other areas of soil disturbance will be reseeded with native grasses and forbs following completion of logging activities. Non-native species commonly used for erosion control and site stabilization will be considered if seed supplies of appropriate native species are not available.

- Vehicles and heavy equipment previously operating in areas contaminated with noxious weeds will be visually inspected for noxious weeds, with any found being removed prior to entering project area.

- Newly constructed roads will be compacted prior to hauling due to the very high erosive nature of the Huckleberry soil complex in the project area. Constructed roads and spurs will be closed at project termination. Cut banks and fill for all constructed roads will also be seeded. Road surface drainage systems and culverts will be placed in a manner that prevents surface erosion. Drainage systems and culverts will remain after road closure.

Wildlife Habitat

- *Green Trees* - At least two wildlife reserve trees (green trees or culls that are a minimum of 12 inches in diameter and at least 10 feet in height) will be retained per acre to maintain a viable population of cavity-dependent wildlife and to provide for biological diversity in the area.

- *Blue Grouse* - In ridge-top areas along the southern boundary of the project area, selected Douglas-fir trees with large mistletoe brooms will be retained for blue grouse winter cover.

- *Goshawk* - If an active goshawk nest is found during harvesting, road building, or other activities related to this proposal, a minimum of 30 acres of the most suitable habitat surrounding the nest will be excluded from the sale. Sale activities within 1 mile of the nest will be delayed to minimize disturbance during the bonding and nesting period, through a seasonal restriction from April 1 to August 30.

- *Snags* - Some dying trees, trees with heartwood rot, insect-infested trees, and trees with distorted shape or wind breakage will be reserved to serve as future wildlife habitat. Trees with the greatest potential for immediate use with old cavities, broken tops, about 33 percent of limbs and bark remaining, with some decay will be retained. A minimum of 14 snags greater than 20 inches diameter and at least 50 feet in length will be retained per 100 acres to maintain nesting habitat for pileated woodpeckers, black-backed woodpeckers, and other cavity dependent wildlife species. If less than 14 snags this size are available per 100 acres, then the next largest sizes will be retained, or large live trees will be girdled to reach this standard.

- *Down Logs*- For ground foraging habitat, numerous large logs will be retained in various stages of decay. Because of their high value and short supply, all existing large hollow logs

will be retained; in addition, some large hollow trees that are cut will be retained on site (up to 1 per 10 acres).

- *Biologist Notification* - During layout, marking, harvest operations or post-harvest activities, should any raptor nests or threatened or endangered species of wildlife be observed by BLM personnel, a biologist will be notified and project activities ceased until a biological evaluation is completed.

Noxious Weeds

- Noxious weeds will be treated using chemical and biological insect control methods. Noxious weed control will be implemented under the guidelines set forth in the *Final EIS for Vegetation Treatment on BLM Lands in Thirteen Western States* dated July 1991 and the Spokane District Noxious Weed Control Environmental Assessment. Specific herbicides and applications methods will be employed to ensure effective control and to prevent off-target damage.

- Monitoring for weeds will be done the first growing season after completion of harvest operations to determine treatment methods. Specific weeds to monitor for are diffuse and spotted knapweed on roads, skid trails and other disturbed areas; and Canada, plumeless and bull thistle within cutting units.

- Noxious weeds invading the site after project implementation will be treated by the Purchaser or BLM.

Monitoring

- Harvested/thinned units will be monitored and evaluated by an Interdisciplinary Team at intervals of 2 and 5 years after project completion. Monitoring will be done to determine whether project goals have been met and if there is need for additional treatments, including: thinning, planting, and underburning.

Other Alternatives Considered But Not Analyzed in Detail

Helicopter Yarding – This alternative is the same as Alternative 1, except that areas over 35 percent slope would be yarded by helicopter. This alternative was not analyzed for economic reasons, because helicopter yarding is expensive. Given market conditions, the resulting sale would be deficit. It would cost more for the government to offer the timber than would be returned through product sale.

III. Affected Environment & Environmental Impacts

Slopes range from flat to about 60 percent.

Vegetation

The project area occupies a north aspect from mid-elevation to ridge top. Stands are dominated by cool/moist and moist sites with heavy competition and commercial sized sawtimber. The present overstory is comprised of trees averaging more than 15 inches in diameter and at least 75 feet in height with some trees over 130 feet tall. Primary species are Western redcedar/queencup

beadlily plant association. Douglas fir/ninebark is a minor type occupying portions of the upper slope and ridge top.

Western redcedar types typically occur on cool/moist and moist sites. Western redcedar is tolerant of shade, high soil moisture, summer drought, and temperature extremes. All tree species occurring in the area, with the exception of whitebark pine, may be found within the western redcedar series. The most important seral tree species are western larch, Douglas-fir, lodgepole pine, and grand fir.

The understory in Western redcedar types is generally species-rich, where the tree canopy cover is not so dense as to preclude light penetration. Stands with herbs in poor quality and shrub layers are often found in dense western redcedar stands with a thick layer of litter. Tall shrubs or herbaceous species seldom dominate the understory. Dense shrubfields characterize early seral stages after logging or wildfire. Shrub species include redstem ceanothus, pachistima, sticky currant, thimbleberry, snowberry, Douglas maple, shiny-leaf spirea, and Scouler willow.

Douglas-fir/ninebark association occupies portions of the upper slope and ridge top.
This community typically occurs on dry, rocky soils, often with steep slopes. The understory is dominated by ninebark and other rhizomatous shrubs and grasses that are adapted to summer drought and fire. These species regenerate well after fire, providing strong competition to tree regeneration.

Plants of Cultural Importance: Berry-producing shrubs used by original peoples, including serviceberry, kinnikinnick, huckleberry, Oregon grape, rose, raspberry, and thimbleberry, are present within the project area.

Noxious Weeds: There are no major weed populations within the project area.

Impacts to Vegetation – Alternative 1(Proposed Action)

Reducing the stocking and improving stands in the project area would reduce the threat of catastrophic, stand-replacing fire. It would also decrease competition among the remaining trees for water, nutrients and light, thus reducing the stresses on the remaining trees that leave them susceptible to insect and disease damage. Removing the majority of the mistletoe-infected trees would decrease the likelihood of mistletoe infection in the remaining trees.

Under this alternative, vegetative communities would be moved toward greater structural diversity. This alternative would result in faster growth of the remaining trees, thus promoting large conifers in the long term.

Impacts to Vegetation – Alternative 2 (No Action)

Under the No Action Alternative there would be no opportunity to meet the stated goals of creating a structurally diverse stand with the resiliency and integrity to withstand disturbance intact. At the current density, there is intense competition between the trees for water and nutrient resources, causing stress to the trees that leaves them susceptible to disease and insect attack. Many Douglas-fir and larch trees in the overstory are now infected with dwarf mistletoe. With no action, the disease would infect the stressed trees in the understory, causing increasing mortality, and possibly a change in species composition as Douglas-fir and larch trees die out.

Openings created by disease would generally be filled by shrub or herbaceous growth. With no action, the large Ponderosa pines near the ridge tops may have their life spans shortened by competition greater than what they have evolved to withstand.

At current densities, the understory trees provide fuel ladders to the overstory, setting the stage for catastrophic, stand-replacing fire if no action is undertaken. Catastrophic fire would increase the scope of current problems with heavy brush invasion, competition to tree regeneration, and dominance of smaller trees.

Special Status Plant Species

According to the Washington Natural Heritage data base, there are no records for any special status plant species within the project area, or within 5 miles of the project area. No special status species were found within the project area in a late season survey.

Impacts to Special Status Plant Species – Alternative 1 (Proposed Action)

No effects are anticipated to Special Status plants because none have been found on the project area. If any Special Status Plants are found prior to project implementation the project will be modified to prevent damage to this resource.

Impacts to Special Status Plant Species – Alternative 2 (No Action)

No impacts.

Wildlife Species and Habitats

Wildlife habitats in the project area support a variety of wildlife species common to northeastern Washington. Important components of wildlife habitats in the project area include:

- A variety of conifer and hardwood tree species.
- Trees of various size and age classes to support nesting, roosting and foraging activities.
- Dense tree clumps and some small openings that promote shrub and herbaceous understory vegetation.
- A variety of snags and dead wood.

Impacts of Alternatives 1 and 2

Over the long term, Alternative 1 (Proposed Action) would provide a greater diversity of habitats and wildlife species within the project area than the No Action Alternative by more closely creating historic forest conditions for project area habitats. Alternative 1 (Proposed Action) would better provide the four important diversity elements listed above, whereas the No Action Alternative would provide few small openings with shrubs and herbaceous plants.

Threatened and Endangered Species and Species of Concern – A biological assessment was completed for four threatened and endangered species listed under the Endangered Species Act. Species that could use the project area for part of their life cycle include: Canada lynx, grizzly

bear, gray wolf, and northern bald eagle. A BLM wildlife biologist consulted informally with the U.S. Fish and Wildlife biologist on potential project impacts to these four species.

Impacts to T & E Species – Alternative 1– Proposed Action

The biological assessment found there would be "no effect" to grizzly bear, gray wolf or bald eagles, and there would be "a may affect but not likely to adversely effect" on Canada lynx under Alternative 1 (Proposed Action).

Impacts to T & E Species – Alternative 2– No Action

The biological assessment concluded "no effect" for all for assessed species under the No Action Alternative

BLM Sensitive Species and Species of Concern - Species of concern are those species identified by the Washington Department of Fish and Wildlife's Priority Habitat and Species Program that either occur or have potential habitat within the project area. Blue grouse is the only species of concern likely to occur within the project area; the project area could provide wintering habitat for this species.

Impacts to Blue Grouse – Alternative 1– Proposed Action

There would be no impacts to Blue Grouse through implementation of the proposed action. Mistletoe infected Douglas-fir trees will be retained on ridge tops as detailed in the project design features above.

Impacts to Blue Grouse – Alternative 2– No Action

The No Action Alternative would likely maintain grouse populations at about their current levels, even though mistletoe trees could slightly increase over time.

Game Species – The main game species in the project area are deer, moose, black bear and grouse. Hiding cover and high quality forage in openings is abundant in the project and surrounding areas.

Impacts to Game Species – Alternative 1 – Proposed Action

The forest would be more open under this alternative, which would reduce hiding cover for game species such as deer, moose and black bear. Since neither forage nor hiding cover are lacking in surrounding areas, neither factors are limiting to big game populations.

Impacts to Game Species – Alternative 2 – No Action

Under the No Action Alternative, the amount of hiding cover and forage amount and quality would remain unchanged over the short term. Loss of hiding cover would result from a wildfire event. The amount of forage would increase in such an event.

Migratory Birds - Many studies have documented a recent decrease in populations of migratory birds in forested areas, especially populations of neotropical migrants. The Huckleberry project area is classified as mixed mesic conifer forest by "Partners in Flight" - a group of migratory bird scientists comprised of government and non-government groups and individuals. Partners in Flight (www.partnersinflight.org) described the important wildlife habitat components in this habitat for migratory birds as multilayered old forest, large snags, overstory canopy closure (60%+) and dense shrub understory.

Impacts to Migratory Birds - Alternatives 1 & 2

Alternative 1 (Proposed Action) would likely provide for all habitat conditions for migratory birds, except for the multilayered old forest. The No Action Alternative would provide only the overstory canopy closure into the foreseeable future.

Fisheries Habitat

Two branches of Alder Creek originate adjacent to the boundary of the project area. They are both intermittent in nature and do not support year-round fish populations.

Impacts to Fisheries – Alternatives 1 & 2

There would be no impacts to the fisheries resource in Alder Creek by implementation of the proposed action. Damage to fish habitat downstream would be prevented by the establishment of buffers around both tributaries.

Recreation

The primary recreation uses for the south Huckleberries area are seasonal dispersed upland bird and big game hunting. Other recreational uses could include wildlife viewing, wild berry picking, horseback riding, dispersed camping, and some snowmobile use. As the BLM acquires more land in the South Huckleberry area and access improves, visitation is expected to increase.

Impacts to Recreation – Alternative 1 – Proposed Action

Increased noise, from timber harvesting and/or fire treatments, could temporarily displace big game and upland birds which could reduce the numbers of hunters to the area. Thinning and removing root-rot pockets, as proposed under the proposed action alternative, would open up stands. In the future, these open stands would improve accessibility for hikers, horseback riders, hunters, and campers.

Harvested areas could temporarily be less appealing to the public for dispersed recreational uses, such as, hiking and horseback riding for a few years or until some understory vegetation returns. In the future, larger healthier conifers and aspen stands are more aesthetically pleasing to visitors.

Many upland birds use slash piles as cover, especially during the winter. Burning these slash piles may reduce the numbers of upland bird using this area.

Impacts to Recreation - Alternative 2 - No Action

If thinning were not completed, future forest health may decline leaving this area visually less inviting. Also, the public may gain the perception that this forest area is not being well managed.

Cultural/Paleontological Resources

The proposed project area is in the Huckleberry Mountains, north of the Spokane Indian Reservation, in an area that was traditionally used by members of the Spokane Tribe and the Confederated Tribes of the Colville Reservation. Native American uses of such upland areas included hunting and the harvesting of plant materials for food, medicines, fiber, and other uses.

The project is in the Deer Trail Mining District just south of the Deer Trail Mine, a center of silver mining from the mid 1890s through early 1900s with some activity continuing into the 1940s. About half of the project area was surveyed for cultural resources in 1985 and for abandoned mines in 1997. These inventories noted at least seven sites associated with historic mining. Several additional adits are present in the proposed sale area, and there is a high probability for occurrence of other such sites. Some known sites include surface remains.

The presence of large cedar trees also suggests the possible presence of trees partially peeled for basketry material. Ethnobotanically important shrubs are mentioned in the vegetation section of this environmental assessment. These include huckleberry, serviceberry, kinnikinnick, Oregon grape, rose, raspberry, and thimbleberry.

There are no known paleontological resources in this area, but there is a possibility of fossils in some areas.

Impacts to Cultural/Paleontological - Alternative 1 – Proposed Action

If the Proposed Action alternative is implemented there would be potential damage to cultural sites due to spur road construction and skidding. Above-ground cultural features may be damaged by slash pile and understory burning. Understory burning would likely stimulate some ethnobotanically important plants, notably huckleberries.

The underburning and management for more open stands included in this alternative would likely increase the populations of some culturally important plants, particularly huckleberries, which are of interest to both Native American and Euro American residents.

Impacts to Cultural/Paleontological - Alternative 2 - No Action

If this alternative is implemented, natural deterioration of the cultural sites would continue, but there would be no additional impact to the sites. If fire occurs in the heavy concentration of fuel present in the area above- ground features of the mining sites and any peeled trees and other ethnobotanically important plants would be destroyed.

Neither alternative would impact Paleontological resources since none are known in the area. Ground disturbance in Alternative 2 would be too superficial to affect unknown Paleontological material in the area.

Soils

Affected Environment

Soil resources within the project area exhibit stable condition. Some minor soil displacement and compaction occurs on existing roads. The soils within the project boundaries are of the Huckleberry soil series. The primary soil on 80% of the project area is Huckleberry-Rock outcrop complex, 30 to 65 percent slopes. Huckleberry silt loam (25 to 40 percent slopes) and Huckleberry silt loam (40 to 65 percent slopes) make up 7 and 13% of the project area, respectively.

These soils are moderately deep and well drained with moderate permeability, high available water capacity, rapid to very rapid runoff, and high to very high erosion hazard. Huckleberry soils are woodland soils suitable for producing Douglas-fir, western larch, lodgepole pine, grand fir, and western white pine. The main limitation of these soils for the harvesting of timber is steepness of slope. Using logging equipment with wheels or tracks can cause rutting and compaction when soils are wet and displacement of top soil when soils are dry. Cable yarding systems, proper design of roads, skid trail and surface drainage systems, as well as vegetative stabilization are recommended on these soils to mitigate soil damage.

Impacts to Soil Resources - Alternative 1– Proposed Action

Soil compaction resulting from use of roads, log landings and skid trails would have the potential to reduce water infiltration, increasing surface runoff and subsequent soil erosion. Soil compaction and displacement could reduce vegetation vigor and density, and could increase the potential establishment of noxious weeds. Soils would be displaced and/or compacted within portions of the project area where tractor skidding is utilized. Specific impacts would occur from track and wheeled logging equipment including soil gouging as a result of tractor and cable yarding and skidding.

Impacts to Soil Resources - Alternative 2– No Action

Soil displacement and compaction would continue at its present level. Allowing forest health to decline further could result in overall stand mortality and subsequent heavy fuel loading, thus establishing a potential for an intense wildfire. Intense wildfires could damage soils, thereby reducing their stabilization and productivity. Soil impacts would include accelerated surface erosion and displacement within the project area, and increased sediment delivery within the affected watershed.

Water Resources

Affected Environment

Two stream segments, each approximately 0.5 miles in length, lie adjacent to the project boundary. These stream segments are within the headwaters of Alder Creek and are first order streams. They are classified by the Washington State Forest Practice Rules and Regulations

(WAC 222-16-030 Water typing system) as a Type "Np" or Type 4 Water and Type "Ns" or Type 5 Water. These waters are described as follows:

> *"Type Np Water"* - means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are waters that do not go dry any time of a year of normal rainfall. However, for the purpose of water typing, Type Np Waters begin at a point along a channel where the contributing basin area is at least 300 acres.
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> *"Type Ns Water"* – means all segments of natural waters within the bankfull width of the defined channels that are not Type Np Waters. These are seasonal nonfish habitat streams in which surface flow is not present for at least some portion of the year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.

Impacts to Water Resources - Alternative 1– Proposed Action

Partial removal of the forest canopy and additional construction of roads, skid trails and landings would create openings in the forest canopy and additional exposed surface areas. Reducing interception and accelerated snow melt may allow more precipitation to become available for stream flow at an increased rate. This may result in physical damage to intermittent streams, increasing sediment load and water temperatures.

Proper road and skid trail construction and maintenance, as well as placement of 100 to 300 foot riparian buffer strips would reduce risk of degradation to streams within and beyond the project area.

Impacts to Water Resources - Alternative 2– No Action

Impacts to water resources would continue at its present level and as influenced by natural and non-timber harvest, human caused events.

Air Resources

Affected Environment

Air quality in the vicinity of the project area is rated high and is generally maintained throughout the year. Natural factors influencing air quality here are mountainous topography, prevailing southwesterly winds from the Columbia Basin, and weather fronts from the Pacific Ocean and Canada.

Impacts to Air Quality - Alternative 1– Proposed Action

Impacts to air quality resulting from the proposed action may include; fugitive dust from vehicular travel on forest roads, and smoke from slash burning.

Impacts to Air Quality - Alternative 2– No Action

Air quality would continue at its present level. However, air quality could be affected by future wildfires within the project area

Socioeconomic

Over the short term, there would be an increased potential for additional visitor use due to road grading, maintenance, and spur road construction. After harvest completion spur roads would be closed and visitor use would return to pre-harvest levels.

Local mills process approximately 100 million board feet annually. The 1.2 million feet proposed harvest would provide about one-week supply of lumber for one mill.

Cumulative Impacts

Vegetation

Adjacent private forest and State DNR lands comprise the majority of the lands within the "southern Huckleberry Mountain region" (cumulative effects analysis area). These lands can be described as 1) having been extensively harvested in the past, 2) are largely in early to mid-seral stages of development, and 3) are not structurally diverse in tree age and size class. Neither alternative would affect structural diversity across the cumulative effects area.

Adjoining and nearby timberlands are owned by private industrial landowners (Boise Company and Inland Empire Paper Company); Washington State Department of Natural Resources (DNR); and the Spokane Indian Reservation. The Boise Company has logged most of their ground and it is heavily roaded. All of the harvesting was selectively cut. Inland Empire has logged approximately 40% of their land. The Spokane Indian Reservation to the south is primarily ponderosa pine, and the tribe has commercially thinned and underburned a large portion of their ownership. Roads in the reservation are of medium density.

The DNR has harvested scattered pieces of their land and plan to continue commercial management.

The project would not cumulatively increase road density or erosion, or change visual resources, as only 40% of the volume would be removed and the two constructed spur roads would be closed after the sale is completed.

Future BLM timber sales are planned on lands adjacent to this project area. Constructed roads needed for access would be closed after project completion. These future actions will be analyzed in the Huckleberry Programmatic Environmental Assessment to be completed in 2005.

Wildlife Species and Habitats

The Huckleberry Ridge area along the south and east edge of the planning area is likely part of a wildlife corridor used by a variety of wide ranging wildlife species to move across the region,

but neither alternative would impact these movements since permanent open roads or clearcuts are not being proposed.

Recreation

Road improvements and skid trail development improve access for both motorized and non-motorized recreational use. Overall visitation could increase due to access improvements.

Cultural/Paleontological Resources:

The Area of Potential Effect for this project includes most of the Deer Trail Mining District. The District's major producing mines, including the Deer Trail and the Germania properties, are privately owned. Road densities in the area are moderate and some parts of it have been logged.

Alternative 1 – Proposed Action

Implementation of the proposed action would, in the short term (three years), result in improved visibility and public access to mining sites which could be used to interpret the history of the Deer Trail Mining District. Increased access and visibility would also make these sites more vulnerable to vandalism. Reduced fuels would make both the sites and culturally important plant populations less subject to destruction by intense fires.

Considering the safeguards and mitigation measures for all project activities, cultural sites are expected to be adequately protected, with minimal impacts.

Alternative 2- No Action

Implementation of the No Action Alternative would permit natural deterioration of the mining sites to continue. Dense forest vegetation would continue to limit access to the sites. Concentrations of dead and diseased trees would result in an increased chance of intense fires which would destroy both the above-ground evidence of the Deer Trail District's mining "boom" and culturally significant plants.

Soil & Water Resources

Common to Alternatives 1 & 2

Considering recovery of the area from past and present land management within the proposed project watershed, as well as design features of the proposed timber sale (such as size of the proposed harvest area, selected logging systems to mitigate impacts to soils, and maintenance of 100 foot intermittent stream buffers to protect water quality), the cumulative effects on soil and water resources are expected to be minimal.

Other Resource Elements Analyzed

Environmental Justice: No disproportionately high and adverse human health or environmental effects on minority or low-income populations are expected to result from implementation of any of the alternatives addressed in this EA.

Critical Elements That Were Considered:

- Air quality
- Wild and scenic rivers
- Prime/unique farmlands
- Floodplain
- Wastes (Hazardous or Solid)
- Special area designations (including Areas of Critical Environmental Concern)
- Wilderness
- Invasive non-native species
- Adverse impacts to energy

Air quality would not be affected, and none of the other elements listed above occur in or adjacent to the project area.

IV. Coordination/Consultation With Other Agencies, Groups and Individuals

This environmental assessment was prepared by an interdisciplinary team of BLM resource specialists representing various resource values, including forestry, soils, hydrology (water), wildlife habitat, cultural values, vegetation, and recreation.

Consultation was initiated with the Washington State Office of Archaeology and Historic Preservation, (OAHP) the Confederated Tribes of the Colville Indian Reservation, the Spokane Indian Tribe, and the Stevens County Historical Society by letters dated April 22, 2003. The OAHP responded with a letter dated April 25, 2003, expressing concurrence with the definition of the Area of Potential Effect and requesting copies of responses from concerned tribes and the cultural resources report when it becomes available. No other comments were received.

The proposed action was discussed informally with the U.S. Fish and Wildlife Service concerning potential impacts to Endangered Species Act listed species, and their comments have been incorporated into this environmental assessment.

This environmental assessment will be provided to adjacent landowners, including Boise Company; Inland Empire Paper; the Spokane Indian Reservation; and the owner of the Deer Trail Mine. A notice of the EA's availability for public review will be mailed to individuals on a District mailing list who have expressed interest in environmental review of district projects. Coordination also is being done with the Washington Department of Fish and Wildlife.

The environmental assessment will be made available for public review and comment through a news release to eastern Washington media, and also through posting on the Spokane BLM Internet website www.or.blm.gov/spokane. In addition, copies of the environmental assessment will be mailed by request.